

INDAM MEETING:
**HYPERBOLIC DYNAMICAL SYSTEMS
IN THE SCIENCES**

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(Super)diffusive asymptotics for perturbed Lorentz or Lorentz-like processes

After the first success in establishing the diffusive, Brownian limit of planar, finite-horizon, periodic Lorentz processes, in 1981 Sinai turned the interest toward studying models when periodicity is hurt, in particular, to locally perturbed Lorentz processes. The 1981 solution for a stochastic random-walk-model only led in 2009 to that for the locally perturbed, finite-horizon Lorentz process (by Dolgopyat, Varjú and the present author). Beside reporting on these results we also analyze the first steps in extending the super-diffusive limit obtained for the infinite horizon Lorentz process to locally perturbed ones (results by Nándori, Paulin, Varjú and the speaker).